

Indiana State Museum

Educational Opportunities for Students

Choices for Tomorrow



Lesson Plan
Text, Activities and
Resources
Grades 6 - 8

Gallery Description

Interactive exhibits in *Tomorrow's Indiana* will encourage your students to consider how today's choices shape the future.

Indiana's Academic Standards

Goals

By participating in the interactive Future Quest and 2025: A Genetic Odyssey, students will:

- Understand how personal and societal choices today will impact the future.
- Use critical thinking skills to weigh choices and options.
- Learn that advances in genetic research will lead to new choices for current and future generations.

Standards

Science

6.1.9, 6.2.8, 6.6.2

7.1.4, 7.19

8.1.1, 8.1.7, 8.1.5, 8.1.8, 8.2.7

Future Quest

Future Quest challenges students to think about how choices about today's economy, society, environment, and technology will shape tomorrow's reality. The exhibit is composed of a six-screen video wall and eight touch screen computers. While the video wall presents many of the concepts, the 8 touch screen computers provide the interactive experience for students.

Future Quest begins with a short video clip, introducing the student to Ismee, a teen from the future, and her cyber sidekick, Bob. After the introduction, Ismee and Bob ask the student six questions. Each question starts with a video clip in which Ismee and Bob discuss the issue at hand. For example, the "How should we meet the challenges of a growing elderly population?" question begins with Ismee and Bob discussing the changing demographics of Indiana. At the end of the video, the student can choose one of several options for Indiana's seniors. After answering six questions, the student sees a possible future for Indiana, based on his or her choices and preferences. Eight possible futures include *Bio Indiana* (state becomes a life sciences powerhouse) and *E-village* (Hoosiers living locally, but interacting globally). After Bob presents the possible future, Ismee points out possible negative aspects of the future. For example, Ismee asks about the unskilled workers' fate in *Bio Indiana*. Each student's experience may be different, as the six questions are chosen randomly from over a dozen possible questions.

Interactive time: 5 to 7 minutes

2025: A Genetic Odyssey

This multi-media interactive experience plays in the 32-seat Futures Forum theater in *Tomorrow's Indiana*. During the presentation's introductory scene, the students meet a future family, the Caldwells. After this opening, the students watch as the family debates four choices related to the impact of genetics and genetic research on their lives. Students watch the family debate the pros and cons of each choice. The students then vote (via touch screen computer monitors at each seat) what they think the family should do. At the end of this presentation, students see possible outcomes for the family, based on the majority opinions. The students in the minority will be able to see, after the conclusion of the program, the other possible outcomes. The four choices are:

- **What should the family do?**
 - Clone Yellow (the family's beloved, deceased dog)
 - Buy Daffington Terrier (a product of multiple selective breeding)
- **What should the family grow?**
 - Vacchini (a squash containing a vaccine for the common cold)
 - Organic heirloom vegetables
- **Should employers be allowed to analyze workers' genetic profiles in order to keep them out of jobs that could be harmful to them?**
 - Yes
 - No
- **What should the family do?**
 - Get the sports package (provide the unborn baby with genes to increase muscle mass and improve hand-eye coordination)
 - Forget the sports package

Interactive time: 15 minutes

Activities

Both *2025: A Genetic Odyssey* and *Future Quest* seek to help students understand how today's choices shape tomorrow. Students learn that their decisions have positive and negative consequences seeing futures for the state and for a family. These decision-making skills will help them consider choices in their own lives.

For students, smoking or not smoking is a choice they will face or have faced. While we know that over 85% of lung cancers are directly related to smoking and lung cancer is the leading cause of cancer death in the United States, teens and pre-teens continue to choose to smoke. Teenage girls are the largest group of people starting to smoke; about 34% of Indiana high school senior girls smoke.

(Statistics from http://www.in.gov/isdh/programs/owh/action/lung_cancer_and_smoking.htm)

To help students understand the consequences of smoking, we have chosen two activities designed to help them experience the results.

Indiana's Academic Standards

Goals

By participating in the following lessons students will:

- Examine the long- and short- term effects of smoking

- Develop a persuasive argument against smoking
- Observe the harmful effects of smoking by observing the accumulation of tar and/or nicotine in a scientific experiment
- Use critical thinking skills to weigh choices and options

Standards

Health Education

6.1.4, 6.2.3, 6.4.1, 6.4.3, 6.5.6, 6.6.1, 6.7.2

7.1.8, 7.2.1, 7.3.5, 7.4.3, 7.6.2

8.1.1, 8.2.2, 8.3.5, 8.6.2

Language Arts

6.5.5, 7.5.7, 8.5.7

Smoking Danger Demonstration

http://www.education-world.com/a_lesson/00-2/lp2192.shtml

In this activity from Education World, students observe the accumulation of tar and/or nicotine on cotton balls placed inside plastic bottle.

Effects of Lung Disease

<http://school.discovery.com/lessonplans/programs/lungdisease/>

In this activity from Discovery School, students experience what it is like to breathe as a smoker and as a patient with chronic lung disease.

Tobacco and Smoking References

Additional lesson plans:

Smoke Signals – A Discover School plan on the physical effects of smoking.

<http://school.discovery.com/lessonplans/programs/smokesignals/>

Smoke Signals – A NY Times plan exploring the economic and health-related impacts of a smoking habit.

<http://www.nytimes.com/learning/teachers/lessons/20010501tuesday.html>

The Great American Smokeout – A Education World overview of numerous smoking and tobacco-related activities.

http://www.education-world.com/a_lesson/lesson034.shtml

Resources:

Indiana Tobacco Prevention and Cessation Web site

<http://www.in.gov/itpc/research.asp>

Includes fact sheets and other Web resources

American Lung Association Web site

<http://www.lungusa.com/>

Resource for information on the lungs and tobacco including -
Information and images of how the lungs work:

<http://www.lungusa.org/learn/>

Smoking and Teens:

http://www.lungusa.org/tobacco/tobacco_teens_index.html

School Programs:

<http://www.lungusa.org/school/>

The Centers for Disease Control and Prevention Web site

<http://www.cdc.gov/tobacco/>

Educational Materials:

<http://www.cdc.gov/tobacco/edumat.htm>

Smokefree Indiana Web site – Kids Only page

<http://www.smokefreeindiana.org/kidsonly.html>